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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/297,399	04/29/99	MIYAMOTO	M 3404/0F546-U

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EXAMINER

SHOSHO, C

ART UNIT

PAPER NUMBER

1714

DATE MAILED:

03/02/00

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/297,399

Applicant(s)

Miyamoto

Examiner

Callie Sh sho

Group Art Unit

1714



☒ Responsive to communication(s) filed on Apr 29, 1999 (pre-amendment)

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-4 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-4 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3 and 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1 recites "alkali-swelling associative thickener". The scope of the claim is confusing because it is not clear what is meant by "alkali-swelling". Does alkali refer to an alkali medium?

(b) Claim 1 recites a "polar solvent containing water". The scope of the claim is confusing given that water is a polar solvent, so it is not clear if the polar solvent is water or a mixture of water and other solvents.

(c) Claim 2 discloses that the thickener "dissolves and swells in an alkaline area in the polar solvent". The scope of the claim is confusing because it is not clear what is meant by "alkaline area" in the polar solvent. How is the alkaline area of the polar solvent formed? How is the area of the polar solvent which is alkaline determined? How is the area defined?

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(d) Claim 2 discloses that the thickener is present “in a proportion of 0.1 to 8% by weight (polymer component) based on the ink composition” wherein the phrase “(polymer component)” (i) seems to suggest improper broad range or limitation together with a narrow range or limitation that falls within the same claim and (ii) causes confusion in the scope of the claim since it is not clear what is meant by “(polymer component)” since the thickener itself is a polymer.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al. (U.S. 5,580,374) either alone or in view of Doolan et al. (U.S. 5,425,806) and Shay et al. (U.S. 5,478,602).

Okumura et al. disclose an aqueous ink composition for ball point pens wherein the ink contains water, polar solvent, pigment, pH adjustor, and 3% thickener comprising polymers containing carboxyl groups and hydrophobic groups (col.1, line 9, col.2, lines 50-55, col.3, line 10, col.5, lines 36 and 54, col. 6, lines 20-28).

The only deficiency in Okumura et al. is that the thickeners are not explicitly referred to as alkali-swelling associative thickeners as required in the present claims.

However, it is significant to note that Okumura et al. disclose thickeners identical to those presently claimed and used in the present invention, i.e. thickeners containing carboxyl groups and hydrophobic groups, as well as ink compositions identical to those presently claimed, and thus, it is natural to infer that these polymers would function the same as the thickeners presently claimed regardless of what they are called by Okumura et al.

Support for this position of inherency of properties based on identity of compositions is found in Titanium Metals Corp. V. Banner, 227 USPQ 773 (Fed. Cir. 1985) where the court held that in comparing claimed and reference compositions it was immaterial what properties the compositions had or who discovered the properties of the compositions because “the composition is the same and thus must necessarily exhibit the properties” and In re Spada, 15

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USPQ 2d 1655, 1658 (Fed. Cir. 1990), "products of identical chemical composition can not have mutually exclusive properties" and "a chemical composition and its properties are inseparable".

Further, particular attention is drawn to the specific types of thickeners disclosed by Okumura et al., for example, ammonium salt of styrene (hydrophobic group) and maleic acid (carboxyl group). One of ordinary skill in the art would have recognized that the presence of the ammonium salt, which is alkaline^{in an aqueous solution}, allows the polymer to be compatible with an alkaline medium, from which it follows that the polymer swells in an alkali medium and that the presence of the hydrophobic group would allow the thickener to associate with other hydrophobic components in the ink. c . S.

Alternatively, Doolan et al., which is drawn to associative thickeners suitable for use in inks, discloses that the mechanism by which these thickeners function involves hydrophobic association between the hydrophobic species in the thickeners and other hydrophobic surfaces present in the aqueous composition (col., line 29, col.2, lines 41-54 and col.3, lines 7-23). Shay et al., which is drawn to alkali-swelling associative thickeners suitable for use in inks, discloses that the thickeners contain both hydrophobic groups and carboxyl groups, and the carboxyl groups function by reacting with alkali (col.1, lines 46-50, col.3, lines 8-11 and col.13, line 10). Both Shay et al., col.1, lines 21-56, and Doolan et al., col.3, lines 10-16, disclose the advantages of associative thickeners as compared to conventional thickeners.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art that Okumura et al.'s disclosure of thickeners identical to those presently claimed would

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function as alkali-swelling associative thickeners especially in view of the presence of both carboxyl groups and hydrophobic groups in the thickener or, alternatively, that thickeners which contain carboxyl groups and hydrophobic groups as disclosed by Okumura et al. are indeed alkali-swelling associative thickeners given the disclosure of both Doolan et al. and Shay et al. of the function of the carboxyl groups and hydrophobic groups as described above, and thereby arrive at the claimed invention.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al. either alone or in view of Doolan et al. and Shay et al. as applied to claims 1-2 above, and further in view of either Kobayashi et al. (U.S. 4,822,417) or JP54138732.

The difference between Okumura et al. either alone or in view of Doolan et al. and Shay et al. and the present claimed invention is the requirement in the claims of a pigment surface treated with a resin and/or surfactant.

Okumura et al. disclose that there is no restriction on the type of pigment used, but do not explicitly disclose surface-treated pigments.

Kobayashi et al., which is drawn to a writing ink composition, discloses the use of pigments surface treated with resins. The motivation for using such pigments is that they are preferred for their dispersability, stability, and workability (col.2, lines 26-33).

Alternatively, pending translation, it is noted that the abstract of JP54138732, which is drawn to a writing ink composition, discloses the use of pigments surface treated with resin. The

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motivation for using such pigments is that impart excellent stability and water-resistance to the ink compositions.

In light of the motivation for using a surface-treated pigment disclosed by either Kobayashi et al. or JP54138732 as described above, it therefore would have been obvious to one of ordinary skill in the art to use this type of pigment in the ink of Okumura et al. in order to produce an ink that has excellent dispersability, stability, and water-resistance, and thereby arrive at the claimed invention.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Santini et al. (U.S. 5,389,717) and Loftin et al. (U.S. 5,951,188) disclose ink compositions containing an associative thickener.

Hanke et al. (U.S. 5,466,281) and Yui et al. (U.S. 4,226,754) disclose ink compositions containing thickeners comprising carboxyl and hydrophobic groups.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner can normally be reached on Monday-Thursday from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

C.S.

Callie Shosho

2/25/00

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